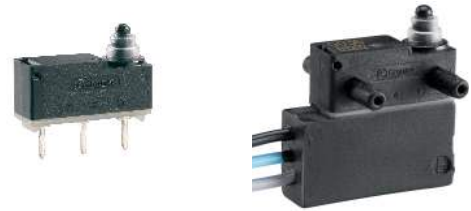


# SUB-SUBMINIATURE MICROSWITCHES - SEALED

## V5S - 8320

- › High precision flexible leaf snap-action mechanism
- › Operation without balance-point, even at extremely slow actuating speed
- › Very small size
- › Extra-long plunger stroke: 2 mm overtravel to absorb dispersions in application
- › Suitable for lateral approach from any direction with angle up to 45°
- › Excellent resistance to harsh environments - IP67/IP69 protection
- › Ratings from 1 mA 4 V<sub>DC</sub> to 4 A 250 V<sub>AC</sub>
- › Long mechanical life
- › Various terminal types and pre-wired models - Choice of flexible actuators



### Main specifications

		Standard 83200	Low current 83201
<b>Function</b>	<b>Connections / Locating pins</b>		
I (changeover)	X1 / none	83200003	83201003
I (changeover)	X1 / CAV, CAR, LAV, LAR, 4C, 4L	●	●
I (changeover)	X1L / none	83200004	83201004
I (changeover)	X1L / CAV, CAR, LAV, LAR, 4C, 4L	●	●
I (changeover)	X2 / CAR	83200005	83201005
I (changeover)	X2 / LAR	83200023	83201023
I (changeover)	X2 / none, CAV, LAV, 4C, 4L	●	●
I (changeover)	X3 / CAV	83200006	83201006
I (changeover)	X3 / LAV	83200024	83201024
I (changeover)	X3 / none, CAV, CAR, LAR, 4C, 4L	●	●
I (changeover)	W2 / LAV	83200034	83201034
I (changeover)	W2 / 4C	83200035	83201035
I (changeover)	W2 / none, CAV, CAR, LAR, 4L	●	●
I (changeover)	W2ST / none, CAV, CAR, LAV, LAR, 4C, 4L	●	●
I (changeover)	FB0 / CAR	83200051	83201051
I (changeover)	FG0 / 4L	83200063	83201063
I (changeover)	FD0 / none	83200071	83201071
I (changeover)	FB0, FG0, FD0 / none, CAV, CAR, LAV, LAR, 4C, 4L	●	●
R (Normally closed)	FB0, FG0, FD0 / none, CAV, CAR, LAV, LAR, 4C, 4L	83202*	83203*
C (Normally open)	FB0, FG0, FD0 / none, CAV, CAR, LAV, LAR, 4C, 4L	83204*	83205*
<b>Electrical characteristics</b>			
Rating nominal / 250 V AC (A)		4	-
Operating range / 4 → 14 V AC/DC (A)		-	0.001 → 0.05
Rating thermal / 250 V AC (A)		5	0.1
<b>Mechanical characteristics</b>			
Max. operating force (N)		1.5	1.5
Min. Release force (N)		0.2	0.15
Max. total travel force (N)		2.5	2.5
Max. Allowable overtravel force (N)		10	10
Max. rest position (mm)		11.1	11.1
Operating position (mm)		10.5 <sup>+0,2</sup>	10.5 <sup>+0,2</sup>
Max. differential travel (mm)		0.15	0.2
Min. overtravel (mm)		2	2
Ambient operating temperature (°C)		-40 → +90	-40 → +90
Mechanical life (operations)		10 <sup>6</sup>	10 <sup>6</sup>
Contact gap (mm)		0.3	0.6
Weight (g) (terminal versions)		0.75	0.75

\* Please contact us

### Additional characteristics

- Cover: PARA GF
- Base: PA66 GF (UL 94-V0 / GWFI 960 °C)
- Button: POM
- Membrane: silicone rubber
- Moving blade: silver-plated beryllium copper
- Contacts: silver alloy
- Terminals: silver-plated brass
- Wire leads: copper, PVC insulated
- Levers: stainless steel
- Degree of protection: IP67/IP69 (mechanism and wire output)
- Protection against electric shock: button and actuators have reinforced insulation for Ui 250V / Uimp 2,5kV / pollution 2
- Recommended min actuating speed: 0.001 mm/s

Standard product

Product made to order

● Contact us

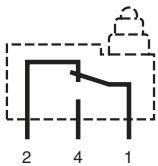
Product adaptations



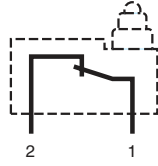
- › Special connections: SMD terminals, special leads, cables, full wiring with custom connector
- › Special levers: special shapes and lengths
- › Fully customized switching modules with integrated connector
- › Integration of resistors for specific electrical diagrams or self-diagnosis function
- › Low switching hysteresis variant: 0.06 mm max differential travel
- › Dual-current version with gold plated contacts for use from 1mA to 4A
- › High operating temperature: +125 °C
- › cURus approved versions - ENEC approval

Principles

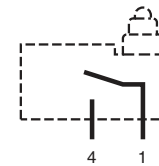
Single break snap-action switch  
Changeover - SPDT (form C)



Normally closed - SPST-NC (form B)



Normally open - SPST-NO (form A)



Curves

Electrical life

Standard 83200

- 250 V~ 4 A resistive > 6.000 cycles
- 14 V~ 2 A resistive 200.000 cycles
- 14 V~ 10 W lamps 100.000 cycles
- 14 V~ 0.5 A L/R = 4 ms 50.000 cycles

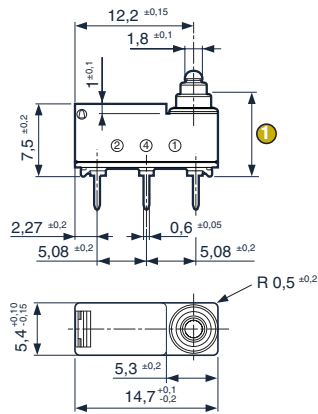
Low-current 83201

- 5 V~ 1 mA resistive 1.000.000 cycles

Dimensions (mm)

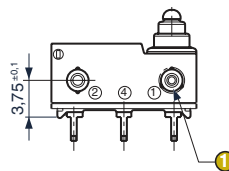
Product

8320  
Version without locating pins



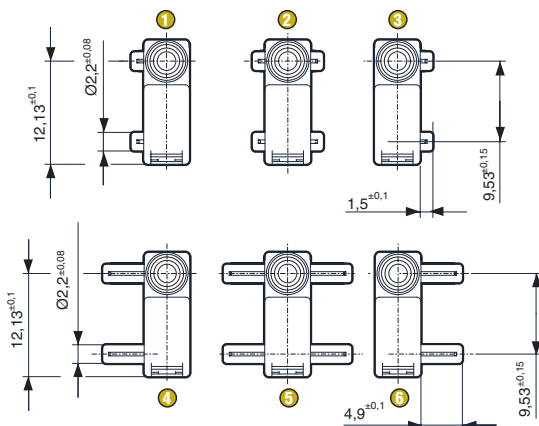
① Total travel position: max 8.5

8320  
Version with locating pins



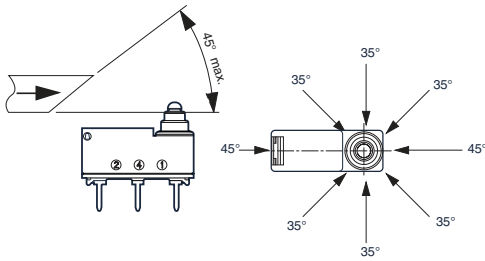
① Ø 2.6 ±0.1 on ribs

Locating pins



- ① 2 short pins at rear (CAR)
- ② 4 short pins (4C)
- ③ 2 short pins at front (CAV)
- ④ 2 long pins at rear (LAR)
- ⑤ 4 long pins (4L)
- ⑥ 2 long pins at front (LAV)

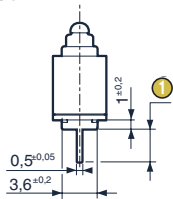
**Recommendations for lateral approach**



In order to reduce friction and wear, the actuating ramp shall preferably be of PA, POM, PBT or steel, and also be as smooth as possible. As a general rule, the use of any lubricant substance is not needed nor recommended. For particular cases, please consult us.

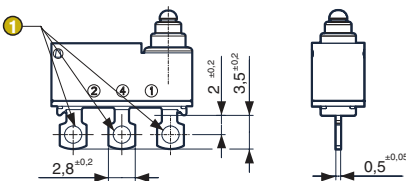
**Connections**

**X1-X1L for printed circuit board, straight output**



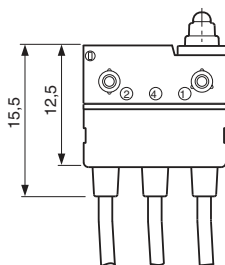
- ① X1 = 3.5 ± 0.2  
X1L = 7 ± 0.2

**W2 - W2ST solder**



- ① With holes: W2 Ø 1.8 ± 0.1  
Without holes: W2ST

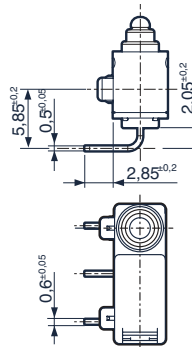
**FB0 wire output on bottom**



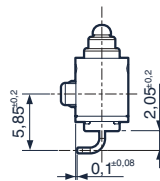
**Wire characteristics**

- 1: Black
- 2: Grey
- 4: Blue
- Cross-section: 0.35 mm<sup>2</sup>
- Standard length: 500 mm (other lengths on request)

**X2 for printed circuit board, rear output**

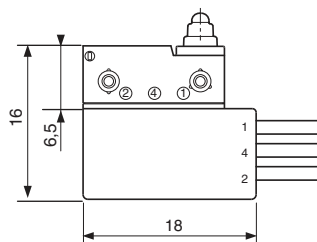


**CMS2 for surface mounting, rear output**

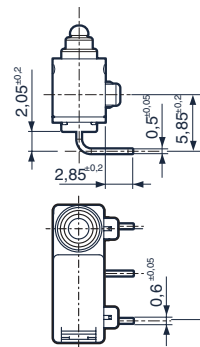


Please contact us

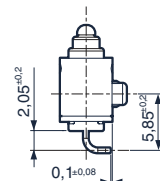
**FD0 wire output on right**



**X3 for printed circuit board, front output**

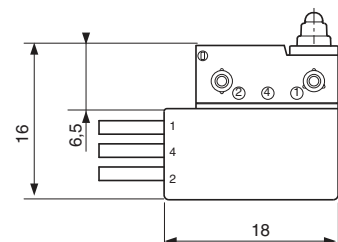


**CMS3 for surface mounting, front output**



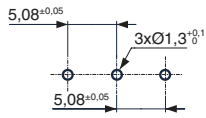
Please contact us

**FG0 wire output on left**

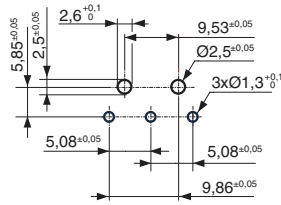


## Drilling

### Installation on printed circuit board X1-X1L-X2-X3

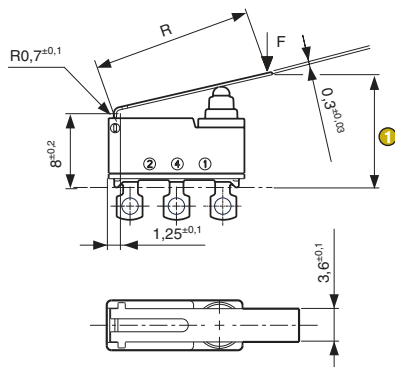


### Installation on printed circuit board with locating pins



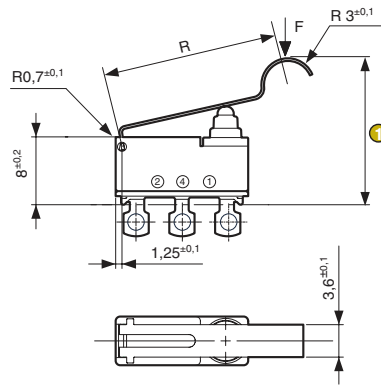
## Actuators

### 200AF flexible flat lever



① Operating position

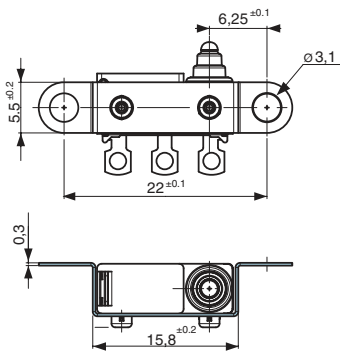
### 200FF flexible dummy roller lever



Other shapes and dimensions:  
consult us




## Mounting accessories

### Stainless steel mounting flange



## Actuators and mounting accessories

### Actuators

Flexibles actuators	Flat <b>200AF</b> R15	Flat <b>200AF</b> R20	Dummy roller <b>200FF</b> R17
			
Max. operating force (N)	1.5	1.3	1.5
Min. release force (N)	0.1	0.05	0.1
Operating position (mm)	11.4 ±0.4	12.2 ±0.4	14.75 ±0.5

Actuators are factory mounted

### Mounting accessories

**79257491**

Stainless steel mounting flange



## Installation recommendations

See "Basic technical concepts"

## How to order

Use the 8 digit part numbers when they are defined

Other cases, precise: Type of microswitch - Connection - Locating pins - Actuator\* - Mounting accessories\* - Adaptation\*  
\* if needed

Example: 83200 W2 CAV 200AF R15 79257491

## Examples of special adaptations



IP67 module with 45° rotary operation, maintained action, integrated connector and quick fastening



IP67 module with integrated connector and quick fastening



Printed circuit board assembly with connector



Special levers



"V4 size" conversion housing and wire lead or cable output



Customized wiring